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Birds of the Shatan River Basin, Mongolia

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ABSTRACT

In our study we recorded 149 species of birds belonging to 97 genera and 36 families in 15 orders. These bird species compose 32% of Mongolian registered bird fauna. Of these 149 species, 54% are passeriformes. Our observation was held in three different habitats: mountains ranging with rocks and forest (88 species), river basins (45 species), and an area around human habitation, specifically train stations outside towns (16 species). Of our studied bird species, 11 are enlisted in the International Union for Conservation of Nature red list as endangered, vulnerable, or near threatened species, and 144 are known as least concerned. Also 20 species are listed in Annexes I and II of the Convention on International Trade in Endangered Species, and 15 species are listed in Annexes I and II of the Convention on the Conservation of Migratory Species.

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Introduction

In some areas of Mongolia, the landscape has been changed dramatically in recent years following mining activity and the development of agriculture. Researchers are aiming to observe and document the changes on biodiversity of such areas.

Undergraduate students from the Departments of Biology and Geography, Mongolian National University of Education, Ulaanbaatar, Mongolia have been doing summer field studies in the past 10 years, with the basic goal to practice on animal and plant identification and their systematics.

Here we unite and process the data gathered by our observations and registration during the past 10 years.

Materials and methods

The study area is located in Batsumber Soum, Tov province (N48.52117, E107.83190), 120 km north of Ulaanbaatar. Geomorphology it belongs to the Tuul River basin and Orkhon-Selenge basin. The maximum altitude is 1300–1700 m; mean altitude is between 50 m and 800 m. Surface soil is composed of imperial granite and mafic rock minerals of the Paleozoic era. The highest

point is Tsogt-Undur mountain (1628 m), located west of our camp site, and the lowest point is in the meeting point of Shatan and Kharaa river (1200 m; [Figure 1](#)). Common habitats of birds are mixed forest (trees are larch and birch) on the shady side of the Mountain, and water meadows of Kharaa, Ulgii, and Shatan rivers.

Our study area also included Khan Kentii Natural Park, where various mammal and bird species are found ([Punsalpaamuu et al 2012](#)).

Here we report the bird species observation data gathered from 2nd July 2014 to 7th July 2014, as well as in earlier years. This report has information about bird species ([Appendix 1](#)) and their breeding. The observation areas covers 68 km² land. June and July were chosen as the best time for matching the birds breeding and feeding, with easier observation compared to other seasons.

We use common itinerary observing method. The equipment and devices used were: Nikon action 6.5° binoculars (Nikon, Tokyo, Japan); bore scope GL8806 Inspect Camera (QY, Guangdong, China); GPS Garmin map 62 (Garmin, Taiwan), Canon EOS rebel T1i with 300 mm lens (Canon, Tokyo, Japan); MS office; GIS 9.3 (Esri, New York, NY, USA); and a guide book of birds.

We observed and documented birds in four different habitats: water meadow, mixed forest, rocky mountain, and human-settled area ([Figure 2](#)), and each species was documented with its number. In some cases, some species track and scat were documented as well, concerning their way to stay hidden in their habitat. We also divided all observed species by International Union for Conservation of Nature Red List Global and Regional status, and international convention annexes ([Gombobaatar and Monks 2012](#)).

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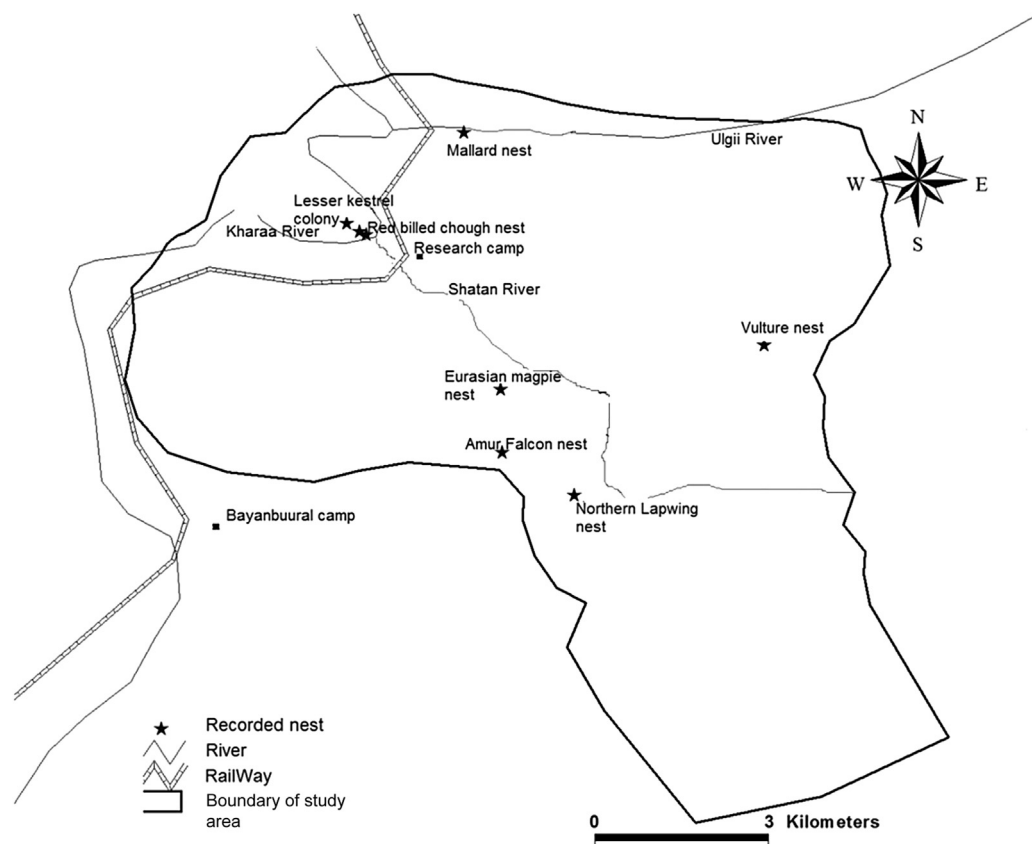


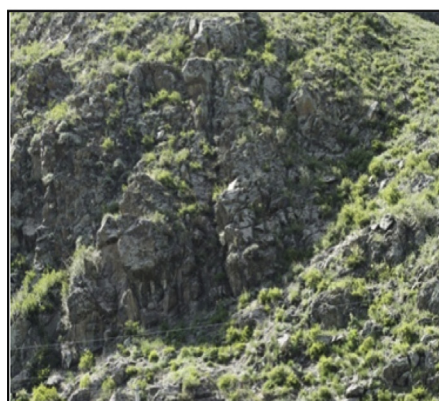
Figure 1. Study area and marked nests.



A



B



C



D

Figure 2. Bird habitats in study area: A, water meadow; B, mixed forest; C, mountain slope, rocky area; D, human habitation, specifically near the train station.

Results and discussion

We recorded 149 species of birds belonging to 97 genera, 36 families in 15 orders. These bird species compose 32% of registered bird species in Mongolia. Of them, 54% were passeriformes, 10% falconiformes, 9% charadriiformes, and 6% anseriformes (Figure 3).

We recorded 70 species in mixed forest, 45 species in water meadow, 18 species in rocky mountain, and 16 species in human-settled was (Figure 3). A large population of long-tailed ground squirrel was found around the mountain antrum. We chose a 300-m² area for checking the hosts of mammal burrows, and supported them with dry cow feces on the hole. Of those nests, 30% had bird tracks showing that they had been resettled by birds. This shows that the small mammal holes are important for the breeding of passeriformes in forest and mountain areas.

Train stations and townships are located following railways and rivers. Such buildings are found to be good nest habitat for small birds, especially, House Sparrow, Raven, Wheatear, Wagtail, Shrike, and Hoopoe (Tseveenmydag 2005, 2007; Boldbaatar 2013; Brazil 2009; Purewsuren 2013).

Of the 149 species identified, only one species is listed as endangered, five as near threatened, 54 as vulnerable, and 144 species are listed as least concern in the International Union for Conservation of Nature Red List. Also 20 species are included in the appendices of the Convention on International Trade in

Endangered Species, and 15 species are included in the annexes of the Convention on the Conservation of Migratory Species.

Daurian Jackdaw, Carrion Crow, Red-billed Chough, Eurasian Magpie, Black Kite, White Wagtail, Great Tit, Ruddy Shelduck, Tree Sparrow, Rock Pigeon, Little Ringed Plover, Common Sandpiper, Cuckoos, and Buntings are common in each habitat.

Our team found a Lesser Kestrel colony on a small rocky mountain near Kharaa River in 2012. We have been observing that colony for 2 years. A total of 3–4 breedings per 6–8 adults is observed in this colony, and we recorded 13 eggs from only three different nests in June 2014. We also recorded a Cinereous Vulture's nest with only one chick, during 2 years. Breeding success was 100% during breeding seasons. This nest is set on a tree, and it is well protected from carnivores, but vulnerable to possible climate impact (strong rain, storms).

Other nests of common species were recorded, such as a Northern Lapwing colony (almost 10 breeding per nest), a Little Ringed Plover's single nest, two Mallard nests (both including 8 eggs), Tit and Bunting nests in tree holes, White Wagtail and Wheatear nests in holes of small mammals, and a Red-Billed Chough nest under a railway bridge. Daurian Partridge and Black-billed Capercaillie have been registered in and in the outskirts of forest in this area.

We provide verification on the potential factors affecting the bird life habit in this area. Forest fire is known to be very dangerous

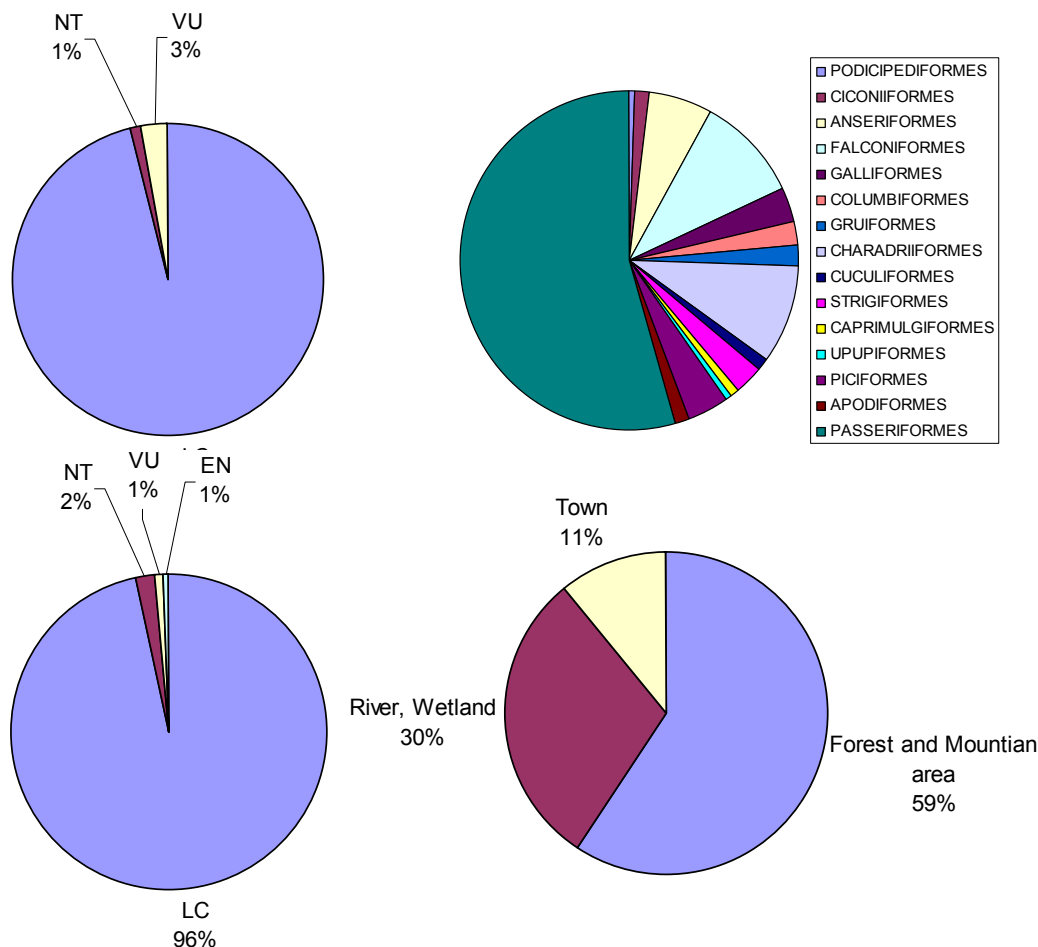


Figure 3. Types of bird (habitats, status, and classification). EN = endangered; LC = least concern; NT = near threatened; VU = vulnerable.

to forest animals, especially birds. Remnants of forest fire are common. In June 2003, a huge forest fire was burning at the time of the students' field practical.

Following domestic animals grazing over the water meadow, many bird nests were destroyed, especially Northern Lapwing, Sandpipers, and Plover nests in the study area. If the number of domestic animals increases, bird habitat will decline.

We are planning to make a guidebook of birds about our study area for researchers and students. This book will include species photos, English and scientific names, and basic species information.

The study field area Shatan is known to be less damaged or preserved natural reserve place covering forest, mountain, marsh, rivers, and water meadow. It is favorable for bird species.

Acknowledgments

We are grateful to members of Mongolian and Korean biological expedition, its former head Mr. Peak, professors of Mongolian National University of Education, and all students and associates.

Appendix 1. Bird checklist of Shatan River basin.

Species name		Status				
Convention		Common name				
	Scientific name	Global status	Regional status	CITES	CMS	
Bird: Aves						
A	Podicipediformes					
1	Great Crested Grebe	<i>Podiceps cristatus</i>	LC	LC		
B	Ciconiiformes					
2	Grey Heron	<i>Ardea cinerea</i>	LC	LC		
3	Black Stork	<i>Ciconia nigra</i>	LC	LC	II	II
C	Anseriformes					
4	White-fronted goose	<i>Anser albifrons</i>	LC	NT		
5	Whooper Swan	<i>Cygnus cygnus</i>	LC	LC		
6	Ruddy Shelduck	<i>Tadorna ferruginea</i>	LC	LC		
7	Mallard	<i>Anas platyrhynchos</i>	LC	LC		
8	Green-winged Teal	<i>Anas crecca</i>	LC	LC		
9	Gadwall	<i>Anas strepera</i>	LC	LC		
10	Tufted duck	<i>Aythya fuligula</i>	LC	LC		
11	Common Goldeneye	<i>Bucephala clangula</i>	LC	LC		
12	Common Merganser	<i>Mergus merganser</i>	LC	LC		
D	Falconiformes					
13	Western Marsh Harrier	<i>Circus aeruginosus</i>	LC	LC	II	II
14	Pallas's Fish-eagle	<i>Haliaeetus leucorhynchus</i>	VU	EN	II	II
15	Black kite	<i>Milvus migrans</i>	LC	LC		
16	Upland Buzzard	<i>Buteo hemilasius</i>	LC	LC	II	II
17	Rough-legged Buzzard	<i>Buteo lagopus</i>	LC	LC	II	II
18	Common Buzzard	<i>Buteo buteo</i>	LC	LC	II	II
19	Steppe Eagle	<i>Aquila nipalensis</i>	LC	LC	II	II
20	Golden Eagle	<i>Aquila chrysaetos</i>	LC	LC	II	II
21	Black Vulture	<i>Aegypius monachus</i>	NT	LC	II	II
22	Northern Goshawk	<i>Accipiter gentilis</i>	LC	LC	II	II
23	Eurasian Sparrow Hawk	<i>Accipiter nisus</i>	LC	LC	II	II
24	Saker Falcon	<i>Falco cherrug</i>	VU	VU	II	II
25	Lesser Kestrel	<i>Falco naumanni</i>	VU	LC	I	II
26	Common Kestrel	<i>Falco tinnunculus</i>	LC	LC	II	II
27	Amur Falcon	<i>Falco amurensis</i>	LC	LC	I	
E	Galliformes					
28	Daurian Partridge	<i>Perdix dauurica</i>	LC	LC		
29	Black Grouse	<i>Lyrurus tetrix</i>	LC	LC		

30 Japanese Quail	<i>Coturnix japonica</i>	NT	LC		
31 Black-billed Capercaillie	<i>Tetrao parvirostris</i>	LC	LC		
32 Hazel Grouse	<i>Tetrastes bonasia</i>	LC	LC		
F Columbiformes					
33 Rock Dove	<i>Columba livia</i>	LC	LC		
34 Hill Pigeon	<i>Columba rupestris</i>	LC	LC		
35 Oriental Turtle Dove	<i>Streptopelia orientalis</i>	LC	LC		
36 Demoiselle crane	<i>Grus virgo</i>	LC	LC	II	II
37 Common coot	<i>Fulica atra</i>	LC	LC		
38 Baillon's Crake	<i>Porzana pusilla</i>	LC	LC		
G Charadriiformes					
39 Little Ringed Plover	<i>Charadrius dubius</i>	LC	LC		
40 Northern Lapwing	<i>Vanellus vanellus</i>	LC	LC		
41 Green Sandpiper	<i>Tringa ochropus</i>	LC	LC		
42 Wood Sandpiper	<i>Tringa glareola</i>	LC	LC		
43 Marsh Sandpiper	<i>Tringa stagnitius</i>	LC	LC		
44 Common Sandpiper	<i>Actitis hypoleucos</i>	LC	LC		
45 Red-necked Stint	<i>Calidris ruficollis</i>	LC	LC		
46 Common Snipe	<i>Gallinago gallinago</i>	LC	LC		
47 Marsh Snipe	<i>Gallinago megala</i>	LC	LC		
48 Eurasian Curlew	<i>Numenius arquata</i>	LC	LC		
49 Little Gull	<i>Larus minutus</i>	LC	LC		
50 Mew Gull	<i>Larus canus</i>	LC	LC		
51 White-winged Turn	<i>Chlidonias leucopterus</i>	LC	LC		
52 Common Turn	<i>Sterna hirundo</i>	LC	LC		
H Cuculiformes					
53 Common Cuckoo	<i>Cuculus canorus</i>	LC	LC		
54 Oriental Cuckoo	<i>Cuculus saturates</i>	LC	LC		
I Strigiformes					
55 Eagle Owl	<i>Bubo bubo</i>	LC	LC	II	
56 Short-eared Owl	<i>Asio flammeus</i>	LC	LC	II	
57 Little Owl	<i>Athena noctua</i>	LC	LC	II	
58 Ural Owl	<i>Strix uralensis</i>	LC	LC	II	
J Caprimulgiformes					
59 Eurasian Nightjar	<i>Caprimulgus europaeus</i>	LC	LC		
K Upupiformes					
60 Eurasian Hoopoe	<i>Upupa epops</i>	LC	LC		
L Piciformes					
61 Eurasian Wryneck	<i>Jynx torquilla</i>	LC	LC		
62 Black Woodpecker	<i>Dryocopus martius</i>	LC	LC		
63 Great Spotted Woodpecker	<i>Dendrocopos major</i>	LC	LC		
64 Grey-headed Woodpecker	<i>Picus canus</i>	LC	LC		
65 Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	LC	LC		
66 Three-toed Woodpecker	<i>Picoides tridactylus</i>	LC	LC		
M Apodiformes					
67 Common Swift	<i>Apus apus</i>	LC	LC		
68 Pacific Swift	<i>Apus pacificus</i>	LC	LC		
N Passeriformes					
69 Crested Lark	<i>Galerida cristata</i>	LC	LC		
70 Short-toed Lark	<i>Galandrella cinerea</i>	LC	LC		
71 Mongolian Lark	<i>Melanocorypha mongolica</i>	LC	LC		
72 Horned Lark	<i>Eremophila alpestris</i>	LC	LC		
73 Common Skylark	<i>Alauda arvensis</i>	LC	LC		
74 Richard's Pipit	<i>Anthus richardi</i>	LC	LC		
75 Tree Pipit	<i>Anthus trivialis</i>	LC	NT		
76 Yellow Wagtail	<i>Motacilla flava</i>	LC	LC		
77 Grey Wagtail	<i>Motacilla cinerea</i>	LC	LC		
78 Yellow Headed Wagtail	<i>Motacilla citreola</i>	LC	LC		
79 White Wagtail	<i>Motacilla alba</i>	LC	LC		
80 Brown Shrike	<i>Lanius cristatus</i>	LC	LC		
81 Isabeline Shrike	<i>Lanius isabellinus</i>	LC	LC		
82 Great Grey Shrike	<i>Lanius excubitor</i>	LC	LC		
83 Bohemian Waxwing	<i>Bombicilla garrulus</i>	LC	LC		
84 Siberian Accentor	<i>Prunella montanella</i>	LC	LC		

(continued on next page)

(continued)

Species name		Status		
Convention		Common name		
Scientific name	Global status	Regional status	CITES	CMS
85 Brown Accentor	<i>Prunella fulvescens</i>	LC	LC	
86 Chinese Bush Warbler	<i>Bradypterus tacsanowskii</i>	LC	LC	
87 Lanceolated Warbler	<i>Locustella lanceolata</i>	LC	LC	
88 Paddyfield Reed Warbler	<i>Acrocephalus agricola</i>	LC	LC	
89 Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	LC	LC	
90 Desert Warbler	<i>Sylvia communis</i>	LC	LC	
91 Lesser Whitethroat	<i>Sylvia curruca</i>	LC	LC	
92 Willow Warbler	<i>Phylloscopus trochiloides</i>	LC	LC	
93 Arctic Warbler	<i>Phylloscopus borealis</i>	LC	LC	
94 Inornate Warbler	<i>Phylloscopus inornatus</i>	LC	LC	
95 Pallas's Leaf warbler	<i>Phylloscopus proregulus</i>	LC	LC	
96 Dusky Leaf Warbler	<i>Phylloscopus fuscatus</i>	LC	LC	
97 Red Breasted Flycatcher	<i>Ficedula parva</i>	LC	LC	
98 Asian Brown Flycatcher	<i>Muscicapa latirostris</i>	LC	LC	
99 Dark sided Flycatcher	<i>Muscicapa sibirica</i>	LC	LC	
100 Spotted Flycatcher	<i>Muscicapa striata</i>	LC	LC	
101 Common Stonechat	<i>Saxicola torquata</i>	LC	LC	
102 Northern Wheatear	<i>Oenanthe oenanthe</i>	LC	LC	
103 Pied Wheatear	<i>Oenanthe pleschanka</i>	LC	LC	
104 Isabelline Wheatear	<i>Oenanthe isabellina</i>	LC	LC	
105 Rock Thrush	<i>Monticola saxatilis</i>	LC	LC	
106 Daurian Redstart	<i>Phoenicurus aureus</i>	LC	LC	
107 Common Redstart	<i>Phoenicurus phoenicurus</i>	LC	LC	
108 Eversmann's Redstart	<i>Phoenicurus erythronotus</i>	LC	LC	
109 Siberian Rubythroat	<i>Luscinia calliope</i>	LC	LC	
110 Bluethroat	<i>Luscinia svecica</i>	LC	LC	
111 Orange-flanked Bush Robin	<i>Tarsiger cyanurus</i>	LC	LC	
112 Pale Thrush	<i>Turdus pallidus</i>	LC	LC	
113 Red-throated Thrush	<i>Turdus ruficollis</i>	LC	LC	
114 Naumann's Thrush	<i>Turdus naumanni</i>	LC	LC	
115 Fieldfare Thrush	<i>Turdus pilaris</i>	LC	LC	
116 Bearded Tit	<i>Panurus biarmicus</i>	LC	LC	

117 Long-tailed Tit	<i>Aegithalos caudatus</i>	LC	LC
118 Willow Tit	<i>Parus montanus</i>	LC	LC
119 Great Tit	<i>Parus major</i>	LC	LC
120 Marsh Tit	<i>Parus palustris</i>	LC	LC
121 Wood Nuthatch	<i>Sitta europaea</i>	LC	LC
122 Rock Sparrow	<i>Petronia petronia</i>	LC	LC
123 Small Snowfinch	<i>Pyrgilauda daviana</i>	LC	LC
124 Common Redpoll	<i>Acanthis flammea</i>	LC	LC
125 Hoary Redpoll	<i>Acanthis hornemanni</i>	LC	LC
126 Common Rosefinch	<i>Carpodacus erythrurus</i>	LC	LC
127 Pallas's Rosefinch	<i>Carpodacus roseus</i>	LC	LC
128 Long-tailed Rosefinch	<i>Uragus sibiricus</i>	LC	LC
129 Pine Crossbill	<i>Pinicola enucleator</i>	LC	LC
130 Eurasian Bullfinch	<i>Pyrrhula pyrrhula</i>	LC	LC
131 Hawfinch	<i>Coccothraustes coccothraustes</i>	LC	LC
132 Barn Swallow	<i>Hirundo rustica</i>	LC	LC
133 House Martin	<i>Delichon urbica</i>	LC	LC
134 Eurasian Magpie	<i>Pica pica</i>	LC	LC
135 Red-billed Cough	<i>Pyrrhocorax pyrrhocorax</i>	LC	LC
136 Carrion Crow	<i>Corvus corone</i>	LC	LC
137 Common Raven	<i>Corvus corax</i>	LC	LC
138 Daurian Jackdaw	<i>Corvus dauuricus</i>	LC	LC
139 Eurasian Rook	<i>Corvus frugilegus</i>	LC	LC
140 Tree Sparrow	<i>Passer montanus</i>	LC	LC
141 House Sparrow	<i>Passer domesticus</i>	LC	LC
142 Pine Bunting	<i>Emberiza leucocephalos</i>	LC	LC
143 Meadow Bunting	<i>Emberiza cioides</i>	LC	LC
144 Rustic Bunting	<i>Emberiza rustica</i>	LC	LC
145 Rock Bunting	<i>Emberiza cia</i>	LC	LC
146 Yellow-breasted Bunting	<i>Emberiza aureola</i>	VU	NT
147 Siberian Jay	<i>Perisoreus infaustus</i>	LC	LC
148 Eurasian Jay	<i>Garrulus glandarius</i>	LC	LC
149 Azure-winged magpie	<i>Cyanopica cyanus</i>	LC	LC

CITES = the Convention on International Trade in Endangered Species; CMS = Convention on the Conservation of Migratory Species; EN = endangered; LC = least concern; NT = near threatened; VU = vulnerable.

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